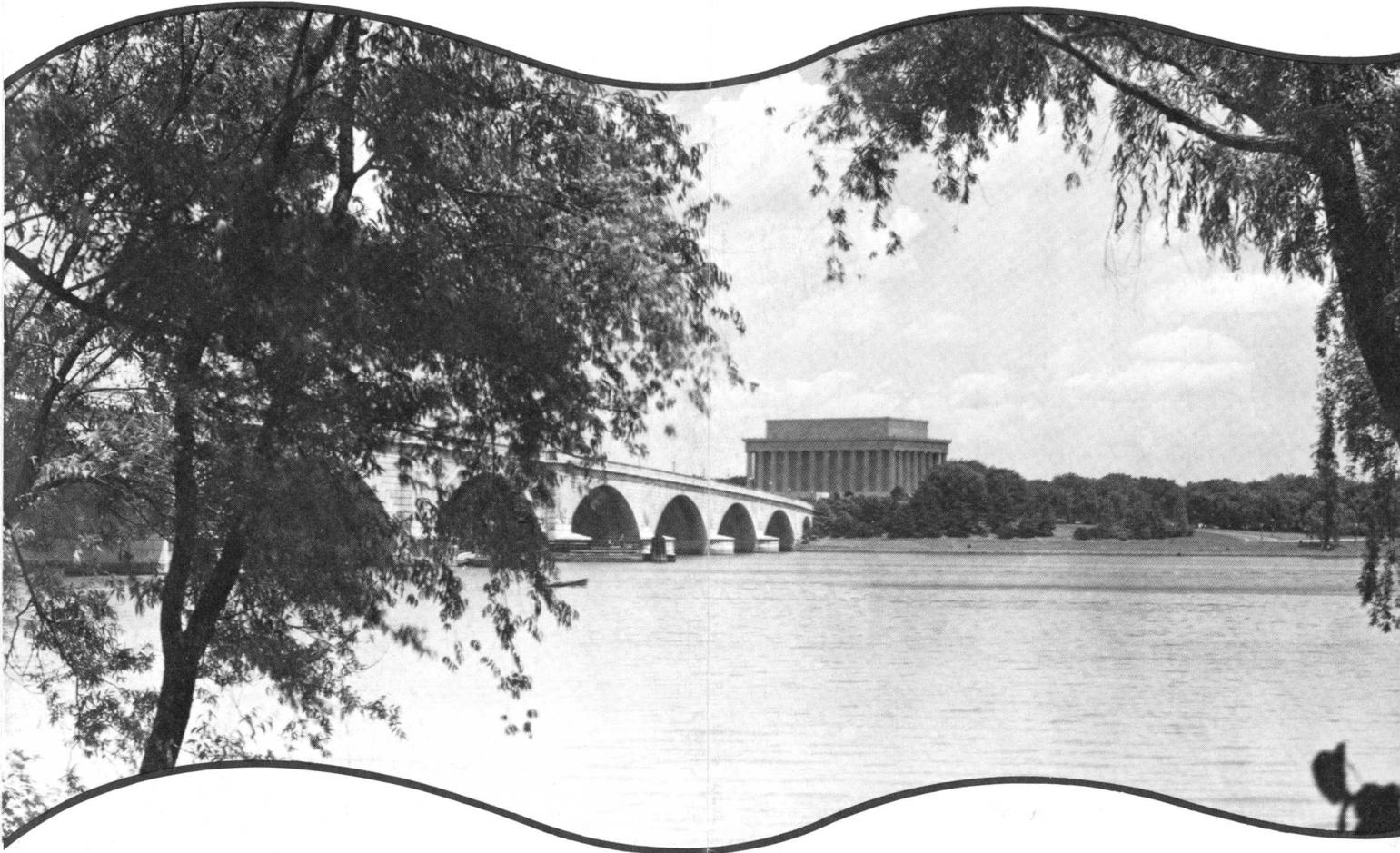


As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.



River Basins of the United States: The Potomac



River Basins of the United States: The Potomac

This leaflet, one of a series on the river basins of the United States, contains information on the Potomac River Basin, including a brief early history, a description of the physical characteristics, and other statistical data. At present, other river basins included in the series are The Colorado, The Columbia, The Delaware, The Hudson, and The Wabash.

Early Exploration and Settlement

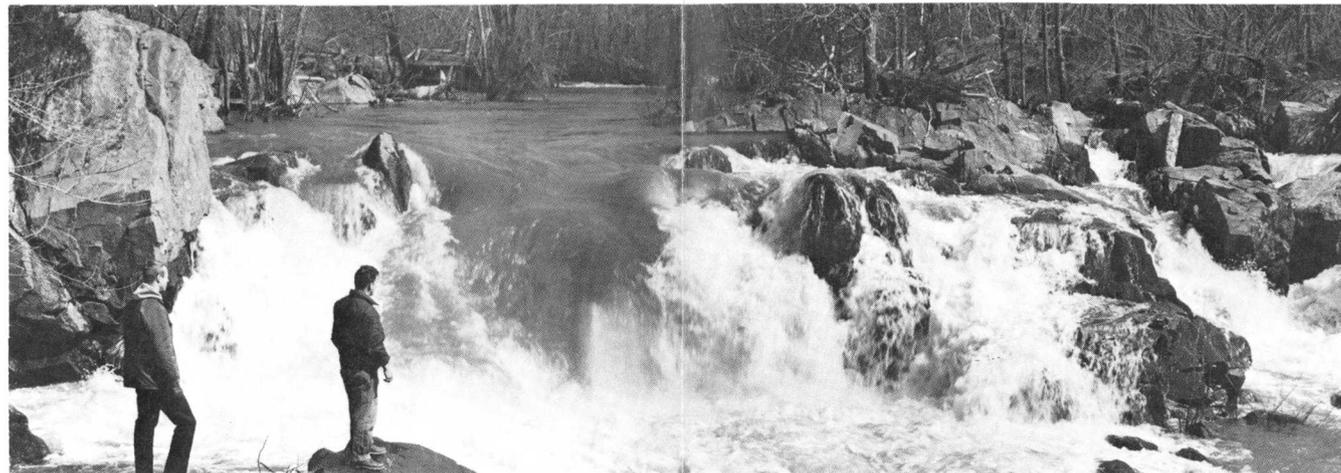
The Potomac was discovered in 1608 by Captain John Smith who called the river "Patawomeke" after an Algonquian Indian family place name for the area that is now Washington, D.C. The basin area was first inhabited by three Indian tribes of the Algonquian family group—Pamunkey and Powhatan in what is now Virginia and Nanticoke in what is now Maryland. The first settlement of Europeans was established in 1634 in the Colony of Maryland by the second Lord Baltimore, Cecil Calvert.

Headwaters

The North Branch of the Potomac River (mainstream headwater) rises in the western Allegheny Mountains near Fairfax Stone, a monument at the Maryland-West Virginia boundary.

Mouth

The Potomac enters Chesapeake Bay between Point Lookout, Md., and Smith Point, Va. The approximate latitude at the mouth is 38°00' N. and the approximate longitude is 76°15' W.



Major Tributaries

The South Branch of the Potomac River, the Savage, Shenandoah, Monocacy, and Cacapon Rivers; and Antietam and Conococheague Creeks are major tributaries of the Potomac.

Course

The North and South Branches flow northeast and unite about 15 miles southeast of Cumberland, Md. The river then flows east-southeast, with frequent meanders, forming the Maryland-West Virginia and Maryland-Virginia boundaries. Passing Harpers Ferry, W. Va., it flows through a relatively steep-sided valley, interrupted by intermittent rapids and riffles. Ten miles north of Washington, the river has cut a 200-foot gorge in which it descends some 90 feet in a 3-mile series of rapids known as the Great Falls of the Potomac. Below Great Falls and past Washington to Mount Vernon, the river flows at moderate depths along gently sloping banks. At Washington, still 116 miles from its mouth, it meets the tide and becomes an estuary. The Potomac enters the Chesapeake Bay about 73 miles from the Atlantic Ocean.

Length

The Potomac River is approximately 400 miles long from its headwaters at North Branch to its mouth in the Chesapeake Bay. It ranks 48th among 135 U.S. rivers that are more than 100 miles long.

Width

The river is about 11 miles wide between Point Lookout and Smith Point. Upstream, from Great Falls to Harpers Ferry, it averages about 1,300 feet in width.

Depth

The deepest point near Morgantown, Md., in the tidal portion of the river below Washington, D.C., is 107 feet. A navigable channel depth of 24 feet is maintained for 108 miles in the tidal portion of the river, downstream from Washington, D.C.

Rate of Flow

Near the headwaters at Cumberland, Md., the river's rate of flow is 559,000 gallons per minute (gpm); about midpoint at Point of Rocks, Md., it is 4.2 million gpm; and the rate of flow at the start of the estuary near Washington, D.C., is 5.1 million gpm.

Highest and Lowest Flows

The highest recorded flow, about 216 million gpm, occurred at Washington, D.C., in March 1936; the lowest flow, 270,000 gpm, occurred at Washington in September 1966.

Dams, Reservoirs, and Canals

The Savage River Dam and Reservoir is near Bloomington, Md., and the Stony River Dam and Reservoir is near Mount Storm, W. Va. The Chesapeake and Ohio Canal parallels the river from Cumberland, Md., to Washington, D.C. The canal formerly was used for shipping, but with its towpath, it is now a recreational area.

Geologic Setting

The Potomac River Basin lies in five physiographic provinces: Coastal Plain, Piedmont Plateau, Blue Ridge, Valley and Ridge, and Appalachian Plateau. The Valley and Ridge province includes the Shenandoah Valley. The land is hilly to mountainous with frequent rock outcroppings in the upper area. From Harpers Ferry to the area above Washington, D.C., the land is open plain with scattered forest cover. West of the Blue Ridge province, rocks are folded sedimentary types including limestone, dolomite, sandstone, and shale. From the Blue Ridge province to Washington, rocks are metamorphic (mainly crystalline) and igneous types. From Washington to the mouth of the river, sedimentary rocks and alluvium predominate.

Drainage Area

The basin area is 14,670 square miles and includes the District of Columbia and parts of Maryland, Pennsylvania, Virginia, and West Virginia.

Average Rainfall

An average of from 35 to 45 inches of rain falls annually in most of the basin, and more than 60 inches of rain fall at the higher elevations of the basin.

Quality

From its headwaters to Washington, the water in the river is fresh; however, in the estuary below Washington, the water becomes brackish. The river delivers 2½ million tons of sediment to the estuary in an average year. The water of the Potomac is usually hard (contains 121 to 180 parts per million of undissolved solids per liter) and requires treatment. It is of good quality except for localized pollution from industrial wastes (including acid mine drainage), municipal wastes, and sediment. Ground water, where available, can be used without treatment.

Major Cities

Chambersburg, Waynesboro, and Gettysburg, Pa.; Silver Spring, Bethesda, Rockville, Hagerstown, and Frederick, Md.; Arlington, Alexandria, and Staunton, Va.; Martinsburg, Keyser, and Romney, W. Va.; and Washington, D.C., are major cities of the Potomac River Basin.

Municipal and Industrial Water Use

About 2½ million people use approximately 450 million gallons of river water each day. About ½ million people on farms, in small towns, and in suburbs use about 100 million gallons of ground water each day.

Commercial Water Use

Shipping from Washington to the Chesapeake Bay; fishing in the estuary; recreation and resort areas above Washing-

ton; and limited hydroelectric power generation are some of the ways in which water from the basin is used commercially.

Agriculture

Agricultural products which come from the basin are: fruit, grain, tobacco, forage crops, and dairy products.

Industry

Industry in the basin includes: wood pulp and textile mills, electronic and chemical industries, and a variety of light industries.

Minerals

Minerals found in the basin are: limestone, sand and gravel, glass sand, coal, shale, lead, zinc, soapstone, marble, pyrite, and manganese; and brick, fire, and ceramic clays.

Water Data

The Hydrologic Data Network, maintained by the U.S. Geological Survey in cooperation with the individual States, is the chief source of basic data on water in this country. In cooperation with other agencies, the U.S. Geological Survey maintains 16,500 gaging stations that measure high and low flow of rivers, lakes, and streams; 27,500 observation wells that collect data on levels and pumpage of ground water; and 8,200 stations that measure water quality.

This publication is one of a series of general interest publications prepared by the U.S. Geological Survey to provide information about the earth sciences, natural resources, and the environment. To obtain a catalog of additional titles in the series "General Interest Publications of the U.S. Geological Survey," write:

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